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J. Webb

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

FORSLOW

Atty. Ref.: 2372-5

Serial No. 09/087,496

Group: 2665

Filed: May 29, 1998

Examiner: Toan D. Nguyen

For: DYNAMIC QUALITY OF SERVICE RESERVATION IN A MOBILE
COMMUNICATIONS NETWORK

October 4, 2002

Assistant Commissioner for Patents
Washington, DC 20231

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REQUEST FOR RECONSIDERATION

Technology Center 2600

Sir:

In response to the Official Action dated June 4, 2002, for which a one-month extension of time is requested, Applicant respectfully requests reconsideration and allowance of the subject application.

Applicant notes with appreciation the Examiner's indication of allowable subject matter in claims 59-65, 76, 79, 103-109, 117 and 118. For the reasons set forth below, Applicant believes all claims are now in condition for allowance.

Claims 49-58, 66-75, 77-78, 80-102, 110-116 and 119-121 are rejected under 35 USC §103 as being unpatentable over newly-cited and applied Bauchot (U.S. Patent No. 5,970,062) in view of newly-cited and applied Raychaudhuri et al. (U.S. Patent No. 5,638,371). This rejection is respectfully traversed.

Bauchot describes wireless access to an ATM network in which different types of ATM service classes with associated quality service parameters are supported at the ATM protocol layer 2 corresponding to the medium access control (MAC) layers. The problem with the Bauchot reference is that it is not directed, as is the present invention, to provide by different quality of service parameters for different ones of plural application flows is a multimedia packet session between a single mobile radio terminal and an external network.

Claim 49 recites that a packet session is established over the radio interface for a mobile radio terminal “during which plural application flows are communicated with an external network entity, each application flow having a corresponding stream of packets.” The Examiner points to column 1, line 46 to column 3, line 13 as well as column 6, lines 40-50 in Bauchot. The first referenced portion of text simply refers to different ATM service classes that have associated quality of service parameters which can be specified at the time of ATM connection setup between an ATM endpoint and an ATM network. The text in column 6 again refers to the ATM quality of service table in column 2 and states that the access point “when scheduling traffic between all the alive ATM connections, must be aware of the traffic and QoS parameters in order to guarantee the traffic contract.” This text is pertinent to protocol layer 2 MAC transport of raw data. Bauchot’s ATM connection does not correspond to one application flow out of plural application flows in a multimedia packet session between a single mobile radio terminal and an external network entity. As explained in Bauchot’s summary of the invention in column 5, the QoS reservation scheme is “for the portion of the *user traffic* which is guaranteed by the ATM contract during the ATM connection setup.” In other words, the ATM connection does not appear to be specific to an individual mobile station. Rather, “user traffic” is a generic term that may include user traffic from plural users. This understanding is further supported in column 5, at lines 10-15, where the downlink channel is for data transfer “from the access point to the mobile terminals [plural], and the uplink channel is for data transfer “from the mobile terminals [plural] to the access point.” Still further, column 8, beginning at line 54 indicates that the

master scheduler allocates time slots to the various ATM connections alive in the wireless cell, it must take into account the respective characteristic of each of them in order to guarantee the service class and quality of service parameters which have been setup when the ATM connections were established.

Thus, it appears that each ATM connection is established to carry traffic for plural users in a cell requesting the QoS supported by that ATM connection. If an ATM connection were set up for just one mobile station, all of that mobile’s traffic would receive the same QoS for which the ATM connection set up. If the session employs plural flows, all of them would receive that same QoS.

Bauchot does not establish a different quality of service for different parallel application flows in a packet session established for a single mobile radio terminal. Nor is Bauchot's ATM transport connection the same as one of the plural application flows. As defined in the instant specification at page 6, line 15, an application flow corresponds to a stream of data packets distinguishable as being associated with the particular host application. Example simultaneous application flows in a multimedia packet session might include an electronic mail message and a downloading of a graphics file from a website. The ATM connection at the MAC layer carries traffic to/from one or different mobile stations and is not specific to an individual application flow in a mobile's multimedia packet session. The application flow in the present invention is at a higher protocol layer than the ATM MAC protocol layer.

Raychaudhuri does not remedy these deficiencies in Bauchot. The Examiner points to the text in column 4, lines 45-53 which simply states that the "network handles traffic from different types of data/multimedia sources." See lines 45-46. These sources do not come from a *single* mobile terminal, but rather from *multiple different* terminals like the multimedia portable PC 16, a portable phone 20, and a handheld digital assistant 22.

Raychaudhuri discloses that the ATM medium access control (MAC) protocol layer can be used to provide different types of bit rate services. But like Bauchot, Raychaudhuri fails to disclose or suggest plural application flows in a single multimedia packet session involving a single mobile radio terminal in which each application flow may have its own quality of service defined.

If the Examiner elects to maintain this rejection, Applicant respectfully requests that the Examiner specifically identify where either Raychaudhuri or Bauchot teach (1) a multimedia packet session involving (2) a single mobile radio terminal that includes (3) plural application flows with (4) each application flow having a corresponding stream of packets where (5) each of the plural application flows may have a different quality of service defined for it.

Regarding claims 50 and 98, where do Bauchot or Raychaudhuri disclose delivering packets corresponding to each application flow in a mobile terminal packet session in accordance with the quality of service defined for each one of those plural application flows? Bauchot and Raychaudhuri show ATM connections but those connections are not the same

thing as the claimed application flows. Indeed, the ATM connections may transport packets being communicated to/from different mobile radio terminals.

Regarding claim 51, 82, and 99, while an end-to-end communication between a mobile host and external network entity is desired in Bauchot or Raychaudhuri, neither reference discloses defining a quality of service for each application flow in a mobile terminal packet session “at a *network packet layer* for an end-to-end communication from the mobile host and the external network entity.” The quality of service of an ATM connection is at the MAC layer which is below the network packet layer in the protocol stack.

Regarding independent claims 66 and 110, neither prior art reference discloses “establishing a packet session for the mobile radio host... during which plural application flows are communicated between the mobile host and an external network entity, each application flow having a corresponding stream of packets.” Nor does either reference disclose or suggest “making a reservation request for a particular quality of service for an *individual application flow* associated with the packet session.” Moreover, where does Bauchot or Raychaudhuri disclose “establishing a logical *bearer* between the mobile radio host and the gateway node to bear plural ones of the individual application flows having different corresponding quality of services?”

Regarding claim 67, neither Bauchot nor Raychaudhuri disclose “classifying and scheduling packets corresponding to each application flow... *over the bearer* in accordance with the quality of service corresponding to the application packet stream.”

Claims 73, 74, and 76 relate to functions performed for individual ones of the application flows. The Examiner fails to point out where either reference performs the claimed functions per application flow of a multimedia packet session.

Claim 77 and 115 recite “establishing a packet session over the radio interface for a mobile radio host... during which plural application flow are communicated with an external network entity, each application flow having a corresponding stream of packets” coupled with “defining a corresponding quality of service parameter for each of the plural application flows such that different quality of service parameters may be defined for different ones of the application flows.” These features are lacking from Bauchot and Raychaudhuri for the reasons set forth above.

Regarding independent claim 80, the Examiner fails to point out in Bauchot or Raychaudhuri where “one mobile radio terminal” is “configured to establish a data packet communications session over the radio interface using radio resources from the pool during which two application flows, corresponding to two data packet applications, communicate to data packet streams corresponding to the two data packet applications with another entity in an external network during the session.” Nor is there disclosure in either reference of “reserving a *different* quality of service class *for each of the two data packet streams* associated with the mobile radio terminal *during the session*.”

Claim 95 recites a mobile radio terminal that includes “a reservation controller configured to reserve a different quality of service for *different ones of plural data packet streams* associated with corresponding applications operated at the mobile radio terminal and *established during a data session* when the mobile radio terminals attached to the radio packet network.” Such a reservation controller is not described in a mobile radio terminal in Bauchot or Raychaudhuri.

Regarding claim 97, the applied prior art references fail to disclose or suggest the claimed *radio packet network node* that includes electronic circuitry configured from the following tasks:

- establish a packet session over the radio interface for the mobile radio terminal using resources from the plural during which plural application flows are communicated with an external network entity, each application flow having a corresponding stream of packets.
- define a corresponding quality of service parameter for each of the plural application flows such that different quality of service parameters may be defined for different ones of the application flows.

For the reasons set forth above, Applicant respectfully submits that the present application is now in condition for allowance. An early notice to that effect is earnestly solicited.

FORSLÖW

Serial No. 09/087,496

Respectfully submitted,

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By:

A handwritten signature in dark ink, appearing to read "John R. Lastova", is written over a horizontal line.

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